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RingCentral Office

Configuring CyberData paging and intercom systems for use with RingCentral Office

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Introduction

RingCentral does not currently offer native support for intercom and paging systems. Some third-party VoIP- and SIP-based intercom and paging systems work with RingCentral service as third-party devices. RingCentral cannot provide full support for these devices; we have documented the basic configuration of one such system sold by CyberData. Get more information on CyberData system, including where to purchase, here: http://www.cyberdata.net/products/voip/digitalanalog/index.html. The website includes product videos and other information to help you learn about the system's capabilities.

CyberData products are highly capable and flexible, and can meet a variety paging and intercom needs. In this document we discuss configuring CyberData products for basic use, and connecting them to your RingCentral account. For more complex configuration and assistance, please review the manufacturer's documentation included with your CyberData product, or contact CyberData and their authorized vendors.

The following products are covered in this document:

- Ceiling Speaker v2
  - Configuration would be nearly identical for the wall mount speaker with clock
  - There is a new ceiling speaker scheduled for release that includes two-way talkback – the configuration will likely be very similar
- Outdoor intercom
  - Configuration would be nearly identical for the indoor intercom and emergency indoor intercom
- Paging amplifier v2
  - Configuration would be nearly identical for the Loudspeaker amplifier
- Paging server

What are the products?

V2 ceiling speaker

This ceiling-mounted speaker can broadcast announcements in a large room.

- Approximate price: $300
- Use it as its own extension, or use multicast to aggregate several together with a VoIP paging server. If you need more than one speaker, use the VoIP paging server to aggregate your speakers or connect standard analog speakers to this speaker so you won't have to purchase additional VoIP lines.
- Configure it using a web interface.
- Runs using Power over Ethernet (PoE). You'll need a PoE-capable switch to power the device. See our article on recommended switches.
- Connect an additional analog speaker to extend the range and broadcast the same audio at lower cost. Use a speaker from CyberData, or a compatible speaker from a third-party. See the CyberData website for specifications of the wire gauge and speaker. Use the wired connection located on the back of the ceiling speaker for this hookup.
- Connect line-level output to an amplifier and run it to any number of additional speakers. These additional speakers will broadcast the same audio as the main speaker they are connected to. Use the wired connection located on the back of the ceiling speaker for this hookup.

Outdoor intercom

The outdoor intercom essentially serves the same role as a phone in the system, except that it dials a fixed number. So a visitor can press the button, which will call the extension of your choice (a receptionist for example). The person who answers the phone can then speak with the visitor.

- Approximate price: $380
- Configure it using a web interface.
- Runs using Power over Ethernet (PoE). You'll need a PoE-capable switch to power the device. See our article on recommended switches.
- Integrate it with a buzzer or door opening system.
- You can also call the intercom from another extension. It will pick up automatically and initiate a two-way conversation.
- Requires its own extension on your RingCentral system (cannot be multicast).

V2 paging amplifier

Use the V2 paging amplifier to interface from the SIP system to external speakers. Connect external speakers with standard speaker wire, optionally using standard amplifier.

- Approximate price: $330
- Use it as its own extension, or use multicast to aggregate several together with a VoIP paging server.
- Configure it using a web interface.
- Runs using Power over Ethernet (PoE). You'll need a PoE-capable switch to power the device. See our article on recommended switches.
- Connect a small number of standard speakers to it directly. Use a speaker from CyberData, or a compatible speaker from a third-party.
- Extend the range affordably by using a separate amplifier. All speakers connected to this device will play the same audio. See the CyberData website for specifications of the wire gauge and speaker.

Paging server

Use the paging server to aggregate several independent sets of VoIP enabled speakers (ceiling speakers or paging amplifiers) to one extension. This way you can use one RingCentral extension or line for paging. This device can control which speakers are activated when you dial the paging extension. Purchase this device to minimize your monthly line costs if you need more than 1 paging zone, or want to use multiple VoIP speakers in one zone.

- Approximate price: $300
- Configure it using a web interface.
- Runs using Power over Ethernet (PoE). You'll need a PoE-capable switch to power the device. See our article on recommended switches.
- Supports multiple paging zones—when you dial the paging extension, the paging server answers. Then, simply press a number for the paging zone you want to page.

System architecture

CyberData systems are extremely flexible and allow for a variety of configurations, whether you want to use new or existing speakers, or a combination of both. You can segregate the speakers into various zones, or treat them as one zone. You can also use intercom devices for specialized needs, such as entry doors. Create a system for one-way announcements, or use intercom or special talkback devices or two-way speakers for speakerphone-type conversation.

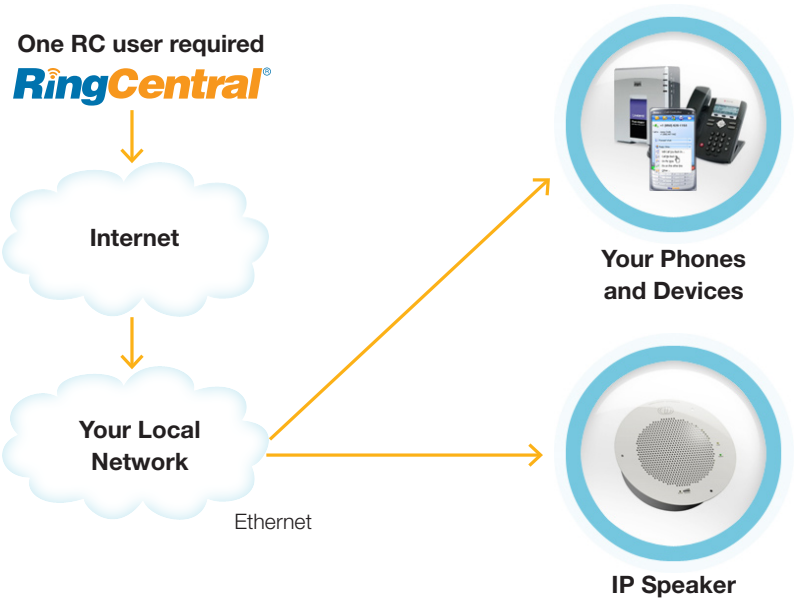
We've provided several common, but not all, configuration setups. Contact a CyberData installation professional for additional setup information. Reference this document when consulting a CyberData installation professional to help them understand how to interface your CyberData system with your RingCentral account.

One-zone system using existing speakers

Figure 1. One-zone system using existing speakers

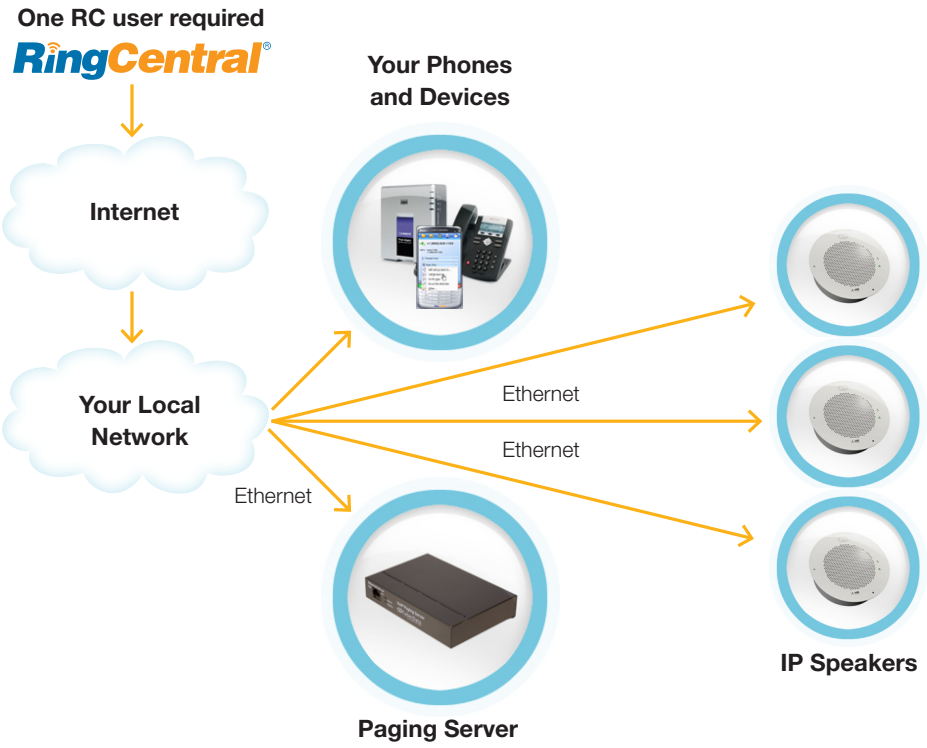
One-speaker system using a new speaker

Figure 2. One-speaker system using a new speaker



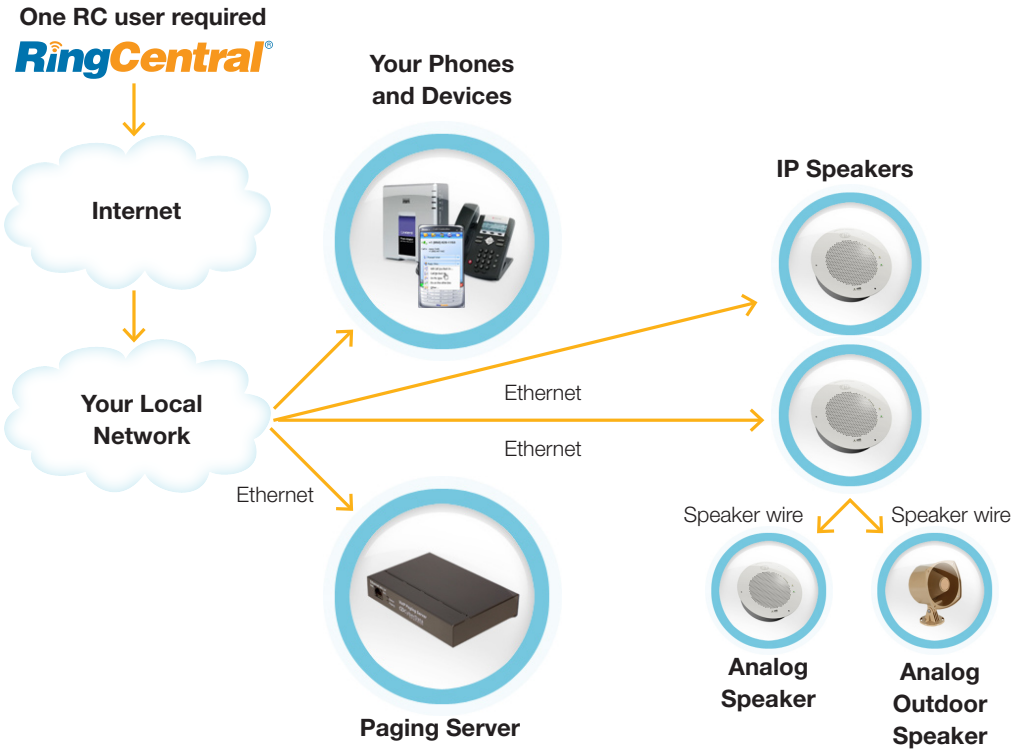
Multi-speaker system using new IP speakers

Figure 3. Multi-speaker system using new IP speakers



Multi-speaker system using IP and analog speakers

Figure 4. Multi-speaker system using new IP speakers and analog speakers



Adding an intercom

Figure 5. Adding an intercom

Configuring your RingCentral account

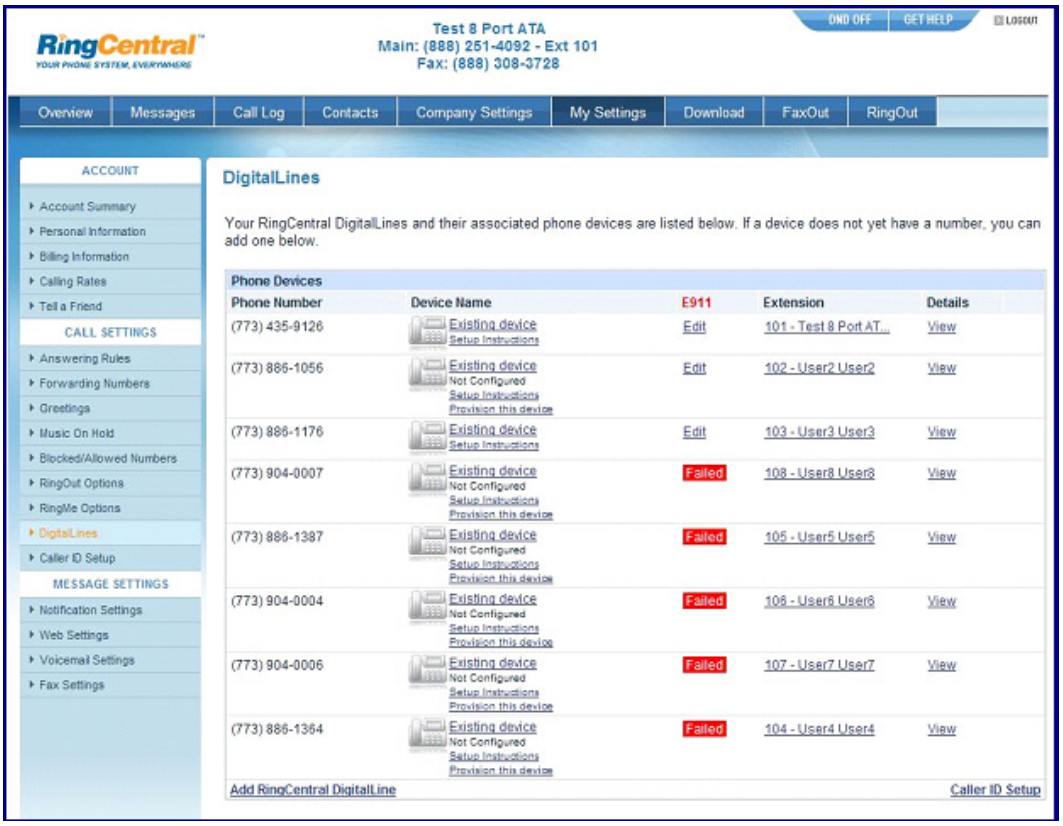
Configure your RingCentral account by provisioning one line for each paging device you need to register. You generally need only one line for most setups. If you need only one paging speaker, use a single ceiling or wall speaker. If you need multiple paging speakers, use multiple speakers with one RingCentral line by deploying a paging server, amplifier, or using the auxiliary connection from the ceiling speaker. You will need to purchase additional lines for each intercom you plan to install.

Set up your RingCentral account

If you don't have a RingCentral account, set up your account, visit ringcentral.com. Add an additional line for the paging extension and select **No Device** as your phone.

If you already have an account, use your existing lines, or add a new line from the RingCentral by logging into your account and selecting the **My Settings** tab then 'Add RingCentral DigitalLine'. Select **No Device** when prompted to choose a phone.

Figure 6. Adding DigitalLines:



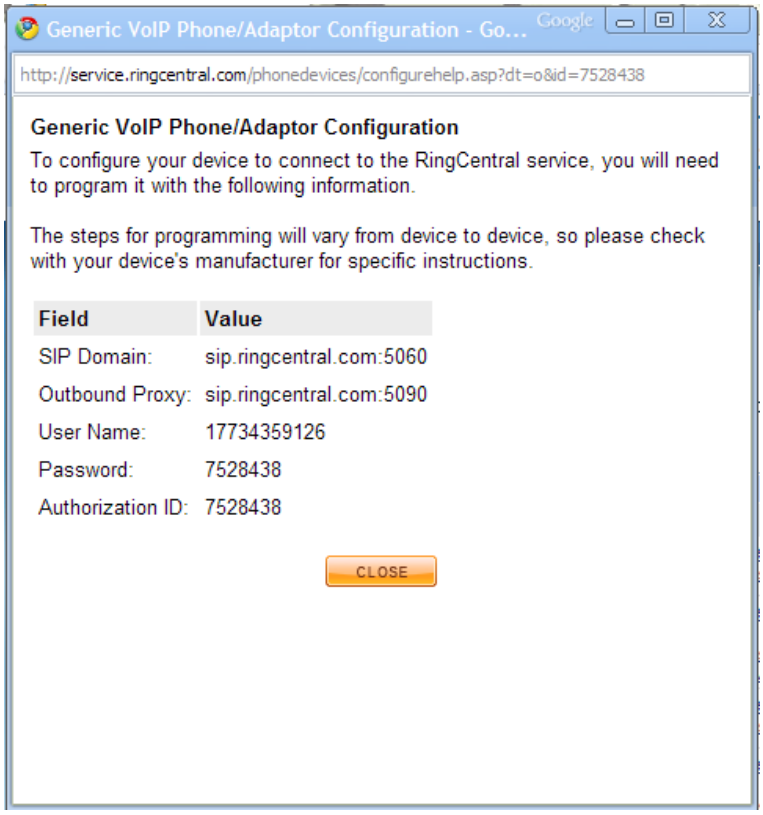
Record configuration information from RingCentral

After purchasing your line(s), log in as an administrator and go to **My Settings > DigitalLines**. You will see a list of the lines you purchased.

Locate each line you wish to use for your paging system. Make sure the E911 column displays the word **Edit**. Otherwise, click **Failed** and provide the e911 data.

Click **Setup Instructions** for each line you want to configure. Copy each of the five fields shown in figure 7 to use in configuring your speakers.

Figure 7. Copy these five fields:



Setup the paging extension(s) to remove usual answering rules

By default, RingCentral extensions have various answering rules and voicemail enabled. These options aren't meant for paging extensions, so they can be disabled in your RingCentral account.

1. Login as an administrator at **service.ringcentral.com**.
2. Go to the **Company Settings** tab and click **Extensions**.
3. Click on **Edit** in the row of the extension you are using for paging to enter the configuration for that extension.
4. Click **Edit** in the **Business Hours** row.
5. Switch **Play Introductory Greeting** to **No**.
6. Switch **Enable Call Screening** to **No**.
7. Switch **Play Connect Prompt** to **No**.
8. Uncheck **Notify my Call Controller** and **wait**.
9. Make sure **Forward my calls** is checked, and select from the list below the phone number of the paging extension.
10. The maximum number of rings setting is not relevant as the speaker will answer immediately.
11. Click **Edit** in the row of the phone number for the extension. In the dialog that pops up set **Prompt me before connecting** to **off** and click **SUBMIT**.
12. In section **3** for **Take my messages** select **No**. Click **SUBMIT**.

The paging device on your network will have a phone number. If you wish to only allow paging from internal extensions, or only from certain numbers, you can configure this in the **Allowed** and **Blocked** functionality for the extension. As above, click **Edit** in the Extensions section of Company Settings.

1. Click on **Blocked/Allowed Numbers** on the left-hand menu.
2. Click **Block All Calls**.
3. Add numbers into the **Allowed** section to allow calls to the paging device from your internal numbers.

If you've configured a company directory (accessible to external callers), remove the paging extension from the directory.

1. Click **Company Settings**.
2. In the default extensions screen, locate the **Company Directory** column between the **Rules** and **My Settings**. Click in the row for your paging extension on the word **Yes** to switch it to **No**.

   Note: If this column is not visible, it means you have not enabled company directory and can skip this step.

Configure the components

V2 ceiling speaker

Install the ceiling speaker in the appropriate location following the instructions, connect a PoE-enabled Ethernet network cable to the device, and plug it into your voice or main network. The status light should be green. Use a paperclip or similar object to press and briefly hold the RTFM button on the front of the speaker. The speaker will read aloud the IP address of the device. If it does not, it is not properly plugged into a network with DHCP using a PoE-enabled switch and cable.

1. On a computer connected to the same network, open a web browser and go to the address read aloud by the speaker.
2. You will be prompted for a password. The default username and password are both admin (you can change the password on the initial screen).

There are tabs on the left for the various device configuration options:

Device Config – Control various speaker options. Most are self-explanatory. See the user manual for more information. These settings can be left with the default value for basic operations.

Networking – Control how the device connects to the network. For most users, this can be left as the default value for DHCP. You are also able to change your network settings.

Sip Config – Configure how the speaker connects to a SIP account. If you use this speaker as a unit with the paging server, you must:

1. Uncheck the **Enable SIP operation** box and press **Save** at the bottom.
2. Press the **Reboot** button.

   If you are using this speaker as a standalone extension and connecting it to your RingCentral account without using the paging server, proceed with the steps below to input your SIP account settings here.

3. In the **SIP Server** field enter the value from your RC account labeled **SIP** Domain, but do not include **:5060**. It should read **sip.ringcentral.com**.

4. Enter **5060** in the **Remote SIP Port** field.
5. Enter **5060** In the **Local SIP Port** field.
6. In the **Outbound Proxy** field enter the value from your RC account labeled **Outbound Proxy**, but do not include **:5090**. It should read **sip.ringcentral.com**.
7. Enter **5090** in the **Outbound Proxy Port** field.
8. Enter the value from your RingCentral account labeled **User Name** In the **SIP User ID** field.
9. Enter the value from your RingCentral account labeled **Authorization ID** in the **Authenticate ID** field.
10. Enter the value from your RingCentral account labeled **Password** in the **Authenticate Password**.
11. Make sure that the **Register with a SIP Server** box is checked.
12. Leave all other settings at their default values.
13. Select **Save**.
14. Select **Reboot**.

    Configuration completes once you reboot. You can now dial it using the extension or direct-dial number. The speaker should answer and you can announce over the speaker.

Multicast Config – configures how the speaker should respond to multi-cast packets. This option is for using the speaker as a member of a group using the Paging Server. If you are not using the paging server, leave this section at defaults. If you are using the paging server, configure it as follows:

1. Check the box **Enable Multicast operation**.

   Note: The system has the capability to listen to multiple addresses at different priorities. For this configuration overview, we assume you are only using one and will put it on priority **8**.

2. In the row next to **8**, enter the multi-cast address you setup in your paging server into the address field. By default it would be **224.224.224.224**.
3. In the same row, enter the port you setup in your paging server into the port field. The default value is **9876**.
4. Fill in the group name or leave it as default.
5. Click **Save**.
6. Click **Reboot**.

Audio Config – Allows you to customize audio tones played by the device in various situations. All options can be left as default.

Clock Config – Not applicable for this device. The wall Intercom with clock will enable this section to set the clock time.

Event Config – Allows you to have the device notify a logging event server of various activities. All options can be left at default.

Autoprovisioning – Leave all options at default.

Update Firmware – Allows you to update the firmware on the device. See CyberData manual for updating firmware if necessary.

Paging Server

1. Connect the paging server to your network. It does not need to be physically connected to the speaker.
2. On a computer connected to the same network, open a web browser and go to the address of the paging server. The default paging server address is **192.168.3.10**.

Note: If your computer is not on the 192.168.3.x subnet, edit the IP address on your computer to an address on the subnet, such as 192.168.3.2. Go to the paging server configuration on 192.168.3.10 and change it to match your network environment. Then change your computer back to the normal address. Use static addresses for the paging server and take note of the IP address for future access.

3. You should be prompted for a password. The default username and password are both admin. You can change the password by pressing the **Admin Settings** button at the bottom.

There are tabs on the bottom for the various device configuration options:

Network setup – Allows you to configure how the paging server connects to your network. We suggest static IP addressing. Change these settings to match your network.

Admin Settings – Sets the administrator password for the device.

SIP Setup – Configures how the paging server connects to a SIP account. Your paging server will connect as a RingCentral extension. Input your RingCentral SIP account settings (see above for obtaining these settings) here.

1. In the **SIP Server** field enter the value from your RC account labeled **SIP** Domain, but do not include **:5060**. It should read **sip.ringcentral.com**.
2. Enter **5060** in the **Remote SIP Port** field.
3. Enter **5060** In the **Local SIP Port** field.
4. Enter the value from your RC account labeled **SIP Domain** in the **SIP Server** field, but do not include **:5060**. It should read **sip.ringcentral.com**.
5. Enter **5060** in the **Remote SIP Port** field.
6. Enter **5060** in the **Local SIP Port** field.
7. Enter the value from your RingCentral account labeled **User Name** in the **SIP User ID** field.
8. Enter the value from your RingCentral account labeled **Authorization ID** in the **Authenticate ID** field.
9. Enter the value from your RingCentral account labeled **Password** in the **Authenticate Password** field.
10. Leave all other settings at default values.
11. Select **Save Settings**.

PGROUPS Setup – Configures how the paging server will communicate with your various paging speakers. You can configure a number of paging groups. Place a call to the extension of the paging server and enter a paging group number on your keypad to send it to that group. In this document, we will assume you are only using one paging group.

1. Click on the **PGROUPS Setup** button at the bottom of the screen.
2. Click to enable **Bypass DTMF**.

   Note: This will automatically forward the paging server to paging group 0. If you want to use multiple paging groups, do not enable this option.

3. Enter a name next to zone 0. Change and take note of the multicast address and port if you like, but you can generally leave them defaulted. Each speaker that needs to be part of the paging group will need to have this information entered (see the section on configuring the speakers and amplifiers).

Upgrade Firmware – Allows you to update the firmware on the device. See CyberData manual for updating firmware if necessary.

Paging Amplifier

Connect the amplifier to your network using a PoE-enabled Ethernet network cable and plug it into your voice or main network. Use the **Spkr Out** output to connect a small number of small-sized speakers directly to the device, or use the **Line-Out** output to connect a larger number through an amplifier.

With at least one speaker connected, use a paperclip or similar object to press and hold the RTFM button on the front of the amplifier.

Note: The speaker will read aloud the IP address of the device; you may need to adjust the volume in order to hear it. If it does not, make sure it's properly plugged in and connected to a DHCP network using a PoE-enabled switch and cable.

1. Open a web browser using a computer connected to the same network and go to the address that was read aloud by the speaker.
2. Enter the password when prompted. The default username and password are both admin (you can change the password on the initial screen).

There are tabs on the left for the various device configuration options:

Device Config – Edit various amplifier options, most are self-explanatory. Please see the CyberData manal for more information. Leave these settings at the default value for basic operation.

Networking – Control how the device connects to the network. Most users can leave this value as defaulted for DHCP.

Sip Config – Determines how the amplifier connects to a SIP account.

If you are using this amplifier as a unit with the paging server, you must:

1. Uncheck the **Enable SIP operation** box and press **Save** at the bottom.
2. Click **Reboot**.

If you plan to use this amplifier as a standalone extension connected to your RingCentral account without using a paging server, input your SIP account settings here.

1. Enter the value from your RC account labeled **SIP Domain** in the **SIP Server** field, but do not include **:5060**. It should read **sip.ringcentral.com**.
2. Enter **5060** in the **Remote SIP Port** field.
3. Enter **5060** In the **Local SIP Port** field.
4. Enter the value from your RingCentral account labeled **Outbound Proxy** in the **Outbound Proxy** field, but do not include **:5060**. It should read **sip.ringcentral.com**.
5. Enter **5090** in the **Outbound Proxy Port** field.
6. Enter the value from your RingCentral account labeled **User Name** in the **SIP User ID** field.
7. Enter the value from your RingCentral account labeled **Authorization ID** in the field **Authenticate ID**.
8. Enter the value from your RingCentral account labeled **Password** in the field **Authenticate Password**.
9. Make sure that the box **Register with a SIP Server** box is checked.
10. Leave all other settings at their default values.
11. Select **Save**.
12. Select **Reboot**.

Your configuration is complete once you reboot your amplifier. You can now dial it using the extension or direct-dial number. The amplifier should answer, and you can make announcements over the speaker.

Sensor Config – This features lies beyond the scope of this document.

Multicast Config – Configures how the amplifier responds to multi-cast packets. Edit this option if you plan to use the amplifier as a member of a group using the Paging Server. If you are not using the paging server, do not edit this option. Otherwise, configure it as follows:

1. Check the box labeled **Enable Multicast operation**.

   Note: The system has the capability to listen to multiple addresses at different priorities.
   For this configuration overview, we assume you are only using one and will put it on priority **8**.

2. In the row next to **8**, enter the multi-cast address you used to configure your paging server into the address field. The default value is 224.224.224.224.
3. In the same row, enter the port you used to configure your paging server into the port field. The default value is **9876**.
4. Enter the group name or leave blank.
5. Select **Save**.
6. Select **Reboot**.

Audio Config – Allows you to customize audio tones played by the device in various situations. All options can be left as default.

Clock Config – Not applicable for this device. The wall Intercom with clock will enable this section to set the clock time.

Event Config – Allows you to have the device notify a logging event server of various activities. All options can be left at default.

Update Firmware – Allows you to update the firmware on the device. See CyberData manual for updating firmware if necessary.

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